

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application. Claims 1-11 and 26 have been maintained in their original or previously presented form. Claims 12-25 were previously withdrawn from consideration. Thus, claims 1-26 are currently pending, and claims 1-11 and 26 are under active prosecution.

1. (Previously presented) A method for the preparation of an additive for providing controllable degradation of thermoplastics of very light colors suitable for processing by film blowing, extrusion, or injection molding, comprising:

reacting a metal salt in its highest stable oxidation state with a $C_8 - C_{24}$ fatty acid or a $C_8 - C_{24}$ fatty acid derivative in the presence of an oxidizing agent to form a fat-soluble metal compound, wherein the oxidizing agent ensures that all of the metal in the additive is in its highest oxidation state.

2. (Previously presented) The method as claimed in claim 1, wherein said oxidizing agent comprises a 0.1-5% aqueous hydrogen peroxide solution.

3. (Previously presented) The method as claimed in claim 1, wherein said oxidizing agent comprises an organic peroxide or hydro peroxide.

4. (Previously presented) The method as claimed in claim 1, wherein said oxidizing agent comprises air or oxygen enriched air.

5. (Previously presented) The method as claimed in claim 1, wherein said metal salt is a chloride.

6. (Previously presented) The method as claimed in claim 1, wherein said $C_8 - C_{24}$ fatty acid or a $C_8 - C_{24}$ fatty acid derivative is added in a stoichiometric excess of at least 20%, in relation to the metal salt.

7. (Previously presented) The method as claimed in claim 1, further comprising: washing the fat soluble metal compound with an aqueous solution of hydrogen peroxide to remove any remains of unreacted metal salt at a temperature of between about 35-55°C for 1 to 3 hours, then washing the fat soluble metal compound with water and drying the fat soluble metal compound in a convection oven.

8. (Previously Presented) The method as claimed in claim 1, wherein said C₈ – C₂₄ fatty acid or a C₈ – C₂₄ fatty acid derivative comprises stearic acid.

9. (Previously presented) The method as claimed in claim 1, further comprising adding wax to the reaction mixture to bind the product to solid lumps that do not release dust.

10. (Previously presented) The method as claimed in claim 1, further comprising removing volatile reaction products and/or reactants by azeotropic distillation.

11. (Previously presented) The method as claimed in claim 1, wherein the metal salt comprises an iron (III) salt.

12. (Withdrawn) A compound for controlling the degradation time of thermoplastic products, comprising:

a metal compound, wherein the metal in the metal compound is in its highest oxidation state and a fatty acid or fatty acid derivative, wherein the degradation promoting compound is prepared by reacting a metal salt and a C₈-C₂₄ fatty acid or fatty acid derivative in the presence of an oxidizing agent, wherein the oxidizing agent maintains the metal in the metal salt is present in its highest oxidation state.

13. (Withdrawn) The compound for controlling degradation as claimed in claim 12, wherein the compound for controlling degradation is included as one of several elements of a master batch being tailored for a particular application.

14. (Withdrawn) The compound for controlling degradation as claimed in claim 12 further comprising at least one additive selected from the group consisting of antioxidants, radical

scavengers, UV absorbers, amines, peroxides, and/ or peroxide forming substances for thermoplastics or blends thereof.

15. (Withdrawn) The compound for controlling degradation as claimed in claim 12, wherein said thermoplastic comprises polyethylene, polypropylene or any combination of polyethylene and polypropylene.

16. (Withdrawn) The compound for controlling degradation as claimed in claim 14, wherein the type and amount of said additive or additives being chosen and adapted respectively are selected so that the desired degradation time is achieved for the actual thermoplastic material or blend of thermoplastic materials.

17. (Withdrawn) The compound for controlling degradation as claimed in claim 14, where said additive is selected from the group consisting of Sanduvor PR25, Chimassorb 81, Cyasorb UV 5911, Tinuvin 326, and Tinuvin 1577.

18. (Withdrawn) The compound for controlling degradation as claimed in claim 14, where said additive is present in a relative amount of from 0.03 to 10% by weight of the thermoplastic material or the blend of thermoplastic materials.

19. (Withdrawn) A method for the manufacture of a very light-colored manufactured thermoplastic material which may be film blown, extruded and/ or injection molded that is degradable in less than one year under influence of light, comprising:

combining a thermoplastic, an additive comprising a metal compound, and an antioxidant, wherein the metal compound additive is prepared by reacting a metal salt with a C₈ – C₂₄ fatty acid in the presence of an oxidizing agent, and wherein the metal compound additive is added to the thermoplastic in an amount of at least 0.03% by weight of the thermoplastic, to produce a processible thermoplastic mixture; and

processing the thermoplastic mixture by film blowing, extrusion or injection molding to produce the manufactured thermoplastic material.

20. (Withdrawn) The method as claimed in claim 19, wherein the amount of metal compound additive and the amount of antioxidant are selected to control the processibility of the manufactured thermoplastic as well as its degradation time under influence of light.
21. (Withdrawn) The method as claimed in claims 19, wherein the metal compound additive comprises ferric(III) stearate in an amount of at least 0.1 % by weight of the thermoplastic.
22. (Withdrawn) The method as claimed in claim 21, wherein the ferric (III) stearate comprises a 0.5 % by weight solution in an aliphatic hydrocarbon, consisting of poly-1-decene, which has a Gardner Colour Number according to ASTM 1544, that is 4 or less than 4.
23. (Withdrawn) The method as claimed in claim 19, wherein said antioxidant is selected from the group consisting of phosphites, thio synergists, CH-acid radical scavengers, and phenolic antioxidants.
24. (Withdrawn) The method as claimed in claim 19, further comprising compounding the additive and the thermoplastic in an extruder.
25. (Withdrawn) A very light-colored thermoplastic material designed to degrade in less than a year may be film blown, extruded and/ or injection molded, wherein the material is manufactured according to claim 19.
26. (Previously presented) The method of claim 1 wherein the step of reacting a metal in its highest stable oxidation state with a $C_8 - C_{24}$ fatty acid or a $C_8 - C_{24}$ fatty acid derivative in the presence of an oxidizing agent further comprises the formation of at least one volatile reaction product.